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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,513	06/29/2001	Masamichi Murota	32301W180	2998
7590	06/17/2003			13
SMITH, GAMBRELL & RUSSELL, LLP ATTORNEY AT LAW 1850 M STREET, N.W., SUITE 800 WASHINGTON, DC 20036			EXAMINER	
			METZMAIER, DANIEL S	
ART UNIT	PAPER NUMBER			

1712  
DATE MAILED: 06/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/893,513	MUROTA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Daniel S. Metzmaier	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
 THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 12 Feb 2003 & 31 March 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1,3 and 5-20 is/are pending in the application.
- 4a) Of the above claim(s) 3,5-9,12,13 and 15-17 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,10,11,14,19 and 20 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

Claims 1, 3, and 5-20 are pending. Claims 3, 5-9, 12-13, and 15-18 have been withdrawn as directed to non-elected inventions. Claims 2 and 4 have been canceled; claim 1 has been amended and new claims 12-20 added by the amendment filed March 31, 2003, Paper No. 12. The corrected original declaration filed February 12, 2003 has been entered as Paper No. 10. The one month extension of time filed March 31, 2003 has been entered as Paper No. 11.

***Election/Restrictions***

1. Newly submitted claims 12-13 and 15-18 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claim 12 is directed to an agglomerated particle. Applicants' amendments and arguments are evidence that applicants believe the viscosity limitation imparts distinction and suggest that the agglomerated particles are indistinct from the prior art materials. No claims to the particles *per se* were set forth in the originally filed application and are deemed to be a distinct invention.

Claims 13 is classified in the Group II of the restriction set forth in Paper No. 6, mailed September 25, 2002 of this application.

Claims 15-16 were not originally presented and are directed to methods of making an aqueous dispersion. Said claimed methods are independent and distinct since they do not include the limitations of claim 1. Claims directed to methods of making that are commensurate in scope to composition claims, may be open to rejoinder upon an indication of allowable composition claims.

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Claim 17 and 18 relate to the non-elected species of a coated silica dispersion and a color image printed thereon.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 3, 5-9, 12-13 and 15-18 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Oath/Declaration***

2. The new Oath/Declaration is acknowledged and is acceptable.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 10-11, 14 and 19-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Cabot Corporation (hereafter Cabot), WO 00/01539. Cabot discloses (abstract, examples and claims) coating compositions for use in recording mediums. Cabot (page 8, lines 8 et seq) discloses the metal oxides employed in the compositions. Cabot discloses (page 11, lines 4 et seq) a first group of particles that are agglomerated particles having a preferred mean diameter of about 0.07 to 0.3  $\mu\text{m}$  (0.07 to 0.3  $\mu\text{m}$  equates to 70 to 300 nanometers (nm)) and a preferred particle size distribution (page 11, line 33 to page 12, line 9) that is very narrow.

Cabot further discloses (page 19, line 36 to page 20, line 20 and Tables 1 and 2) the coating compositions employing the dispersed metal oxide nanoparticle aggregates have a viscosity at a relatively high shear rate in the range of less than 100 centipoise at 22°C. A viscosity of 1.0 centipoise = 1.0 mPa.s.

The ranges claimed for particle size<sup>1</sup>, particle size distribution and viscosity substantially overlap and would have been expected to have been inherent to and read

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<sup>1</sup> The particle size disclosed is characterized as a mean particle size rather than the claimed average diameter. The mean is synonymous with the average.

on the claimed ranges. See MPEP 2131.03. The ranges are deemed anticipated since they are taught with sufficient specificity.

See also MPEP 2112.02, wherein when the structure recited in the reference is substantially identical to that of the claims, the claimed properties are presumed to be inherent. To the extent the Cabot reference incorporates a second group of particles not set forth in the instant claims, the claims employ open language, i.e., comprising, that is open to the incorporations of other materials. The Cabot reference discloses compositions that are taught for the same purpose as those instantly claimed and the incorporation of further ingredients as disclosed in the Cabot reference is not precluded from the claimed compositions. Furthermore, claims 1 and 2 explicitly define the agglomerated dispersion particle distribution rather than all the particles in the compositions.

To the extent the claims were to define the particle distribution of all the ceramic nanoparticles in the composition, Cabot (comparative examples) anticipates the compositions since the compositions are made with agglomerated particles in the absence of the second group of particles and having (tables 1 and 2) viscosities in the range claimed.

To the extent the Cabot reference differs in the particular properties of viscosity, particle size, and/or particle size distribution as claimed, some variation would have been expected for a particular coating composition. Since all the ranges defining the physical properties of the claim overlap and/or are generally taught in the Cabot reference, it would have been obvious to one of ordinary skilled in the art at the time of

applicants' invention to vary the compositions for the advantages taught in the Cabot reference of appearance, gloss, ink absorption and image smear resistance.

To the extent the further incorporation of the second group of particles is interpreted as a ceramic particle for the purpose of defining the particle size distribution, said interpretation does not distinguish the claims under anticipation or obviousness. Initially, comparative examples show the claimed compositions. Also, the second group of particles is not agglomerates as set forth in the claims. Lastly, the Cabot reference (page 16, lines 3-20) does not require the second group of particles to be metal oxides, *i.e.*, ceramic, by the inclusion of polyolefins, plastics, urea resins and melamine resins as second group of particles. These are not ceramic particles. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ the organic polymer materials as the second group of particles.

Regarding the process limitations of claims 11 and 20, product-by-process claims are not limited to the steps recited in the claims. Product-by-process claims are limited only by the structure implied by the steps recited. In the instant case, the steps recited are to give a narrow particle size distribution, which the prior art teaches as the desired form of the products.

7. Claims 1, 10-11, 14 and 19-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Liu et al, 5,958,168. Liu et al (examples) discloses coating compositions for ink receiving coatings. Liu et al discloses particles substantially identical to those claimed that are pulverized by a high pressure homogenizer. The physical properties as claimed would

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have been inherent to the compositions of the Liu et al reference based on the substantially identical characterization of the compositions for the same utility and the instant invention.

To the extent the viscosity and/or the particle size distribution disclosed in the Liu et al reference differs from the claims, some variation would have been expected for a particular coating composition. Since all the ranges defining the physical properties of the claim overlap and/or are generally taught in the Liu et al reference, it would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the compositions for the advantages taught in the Liu et al reference of appearance, gloss, ink absorption and image smear resistance.

Regarding the process limitations of claims 11 and 20, product-by-process claims are not limited to the steps recited in the claims. Product-by-process claims are limited only by the structure implied by the steps recited. In the instant case, the steps recited are to give a narrow particle size distribution, which the prior art teaches as the desired form of the products.

***Response to Arguments***

8. Applicant's arguments filed March 31, 2003 have been fully considered but they are not persuasive.

9. Applicants (page 8) assert Cabot discloses the use of conventional mixers, e.g., ultrasonic homogenizers or jet mills rather than the ultra-high pressure counter [current] jet streams. This has not been deemed persuasive since the structure of the claimed

compositions read on the reference and have not been shown to be distinct from the compositions disclosed in the cabot reference as set forth in the rejection.

10. Applicants (page 8) direct attention to page 27 of the reference and the comparative examples. This has not been deemed persuasive because it is unclear where at page 27; the reference teaches the comparative examples do not work. Table 1 on page 30 teaches a difference in viscosities, but both the reference examples and comparative examples read on the claimed viscosities (1 centipoise = 1 mPa s). This is not seen as a distinction over the instantly claimed invention.

11. Applicants (page 9) assert the Cabot reference does not teach the high pressure counter jet stream. The compositions may clearly be made by other methods. Furthermore, applicants do not show said method step imparts patentable distinction over the prior art. At page 10 of the instant application, applicants assert the particle size and the particle size distribution to be critical to the invention. The particle size is disclosed in the Cabot reference and the distribution is characterized as monodispersed. Since the materials appear to be the same, applicants arguments regarding the treatment step in making said materials has not been probative for patentability.

12. Applicants (pages 9 and 10) assert the conventional aqueous dispersions of instant Table 1 were made by a bead mill. Applicants have not provided the required nexus to conclude the instant results are commensurate with Cabot's particles.

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13. Applicants (page 10) argue they have provided a modified Table 1, which shows the viscosity is lowered less than 33% and the average diameter is lowered less than 5%.

Initially, the table is not probative evidence because it is not in declaration form. Secondly, applicants claim compositions appearing to be the same or substantially the same. Applicants particle size ranges and viscosity reads on the reference. Applicants data does not show the claimed invention to be patentably distinct and non-obvious from the Cabot compositions appearing to be the same or substantially the same.

14. Applicants (pages 10-12) direct attention to the graphs attached comparing the simulated data of the Liu et al compositions with those employed in Table 1. Initially, the data is not probative evidence because it is not in declaration form. Furthermore, applicants admit the curve as characterized by applicants in attached Figure 2 meets the requirements of claim 1. Attached Figure 2 is a curve, though it may not be a preferred curve.

### ***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (703) 308-0451. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on (703) 308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Daniel S. Metzmaier  
Primary Examiner  
Art Unit 1712

DSM  
June 16, 2003